

**ABSTRACT**

A thermally tunable optical fiber device comprises a length of optical fiber including a device disposed within a microcapillary heater. The microcapillary heater can include a thin film resistive heater. The fiber itself can optionally include a thin film resistive heater overlying the device, and a plurality of nested microcapillary tubes can optionally provide a plurality of successive concentric heaters overlying the device. The heaters films can be films with uniform, tapered or periodically varying thickness. The heaters can be single layer or multiple layer. Multiple layer films can be superimposed with intervening insulating layers or plural layers can be formed on different angular regions of the microcapillary. Thus one can provide virtually any desired temperature versus length profile along the fiber device.

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